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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,101	02/12/2002	Ian B. Betty	BTW-029	3700
959	7590	02/24/2005	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			SUCHECKI, KRYSZYNA	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 10/073,101	<b>Applicant(s)</b> BETTY ET AL.	
	<b>Examiner</b> Krystyna Suchecki	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5,7,8,11 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5,7,8,11 and 17-19 is/are allowed.
- 6) ☒ Claim(s) 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Ido (US 6,111,998).

3. Regarding Claim 16, Figure 7A of Ido teaches an optical attenuator comprising: an input waveguide (1), an imaging multimode interference device (at 2) adapted to substantially remove all modes but a fundamental mode of an optical signal received from said input waveguide; and an electrode (at 2) adapted to apply a bias voltage to a surface of said imaging multimode interference device; wherein said imaging multimode interference device is a 1-to-1 device having a single input and a single output.

### ***Allowable Subject Matter***

4. Claims 1, 5, 7, 8, 11 and 17-19 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1, 5, 7 and 8 remain allowable for at least the reasons indicated in the Office action dated 07/27/04. Claim 11 contains allowable subject matter for at least the reason that the prior art of record fails to teach or fairly suggest an integrated optical circuit comprising a waveguide device combined with two imaging multimode interference devices (MMI) and angled input and output as claimed. While art such as Hamamoto teaches an angled input and output attached to an MMI/optical device combination, there is no suggestion to add an additional MMI device to the

Art Unit: 2882

combination. Claims 17-19 contain allowable subject matter at least by virtue of their dependency.

***Response to Arguments***

6. Applicant's arguments filed 11/29/04 have been fully considered but they are not persuasive. Applicant argues that Ido does not teach an attenuating device. However, Ido teaches a filter in combination with a laser device. The filter acts as a mode stripper and removes a portion of the optical signal so that the laser can operate more effectively. A filter is an attenuating optical element in that it reduces, or narrows, the optical signal passing through it. Applicant has not disclosed in the specification or claims any special technical definition or limiting physical feature to impart a particular meaning to the attenuator. Had any special physical feature or description been given to the attenuator so as to differentiate it from the mode stripper, it would not have been given patentable weight by appearing only in the preamble. At this point, the attenuator, as claimed, merely describes the phenomenon occurring and has not overcome the filter/attenuator of Ido.

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a bias voltage as applied to a particular surface) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claim recites that a bias voltage be applied to "a" surface of the imaging multimode interference device. Page 7 of the specification indicates that some epitaxial layer be combined with the electrode and the device. Since Applicant has chosen not to illustrate this portion of the

Art Unit: 2882

invention, it is possible that the epitaxial layer interpose the electrode and the MMI mode filter such that the reference to Ido has not been overcome.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495. The examiner can normally be reached on M-F, 9-5.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2882

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER